



Order Instituting Rulemaking to Implement the Commission's Procurement Incentive Framework and to Examine the Integration of Greenhouse Gas Emissions Standards into Procurement Policies

R.06-04-009

APPLICATION FOR REHEARING, OR IN THE ALTERNATIVE, PETITION FOR MODIFICATION OF THE ENERGY PRODUCERS AND USERS COALITION AND THE COGENERATION ASSOCIATION OF CALIFORNIA

Michael Alcantar Donald Brookhyser Alcantar & Kahl LLP 1300 SW Fifth Avenue Suite 1750 Portland, OR 97201 503.402.9900 office 503.402.8882 fax mpa@a-klaw.com deb@a-klaw.com

Counsel to the Cogeneration Association of California

Evelyn Kahl
Seema Srinivasan
Alcantar & Kahl LLP
120 Montgomery Street
Suite 2200
San Francisco, CA 94104
415.421.4143 office
415.989.1263 fax
ek@a-klaw.com
sls@a-klaw.com

Counsel to the Energy Producers and Users Coalition

February 26, 2007

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Implement the Commission's Procurement Incentive Framework and to Examine the Integration of Greenhouse Gas Emissions Standards into Procurement Policies

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APPLICATION FOR REHEARING, OR IN THE ALTERNATIVE, PETITION FOR MODIFICATION OF THE ENERGY PRODUCERS AND USERS COALITION AND THE COGENERATION ASSOCIATION OF CALIFORNIA

The Energy Producers and Users Coalition¹ and the Cogeneration Association of California² (EPUC/CAC) hereby move pursuant to Rule 16.1 for rehearing of the *Interim Opinion on Phase I Issues*, Decision 07-01-039 ("the Decision"), issued by the Commission in this matter on January 25, 2007. Alternatively, EPUC/CAC move for modification of the Decision pursuant to Rule 16.4.

I. INTRODUCTION AND SPECIFICATION OF ERROR

The Decision should be revised to provide a rational and reasonable method for calculating the carbon emissions of a bottoming-cycle cogeneration plant. The Decision is based on the assumption that a bottoming-cycle plant has "useful thermal output."

Unlike topping-cycle cogeneration plants which produce thermal energy and electricity,

EPUC is an ad hoc group representing the electric end use and customer generation interests of the following companies: Aera Energy LLC, BP America Inc. (including Atlantic Richfield Company), Chevron U.S.A. Inc., Shell Oil Products US, THUMS Long Beach Company, and Occidental Elk Hills, Inc.

² CAC represents the power generation, power marketing and cogeneration operation interests of the following entities: Coalinga Cogeneration Company, Mid-Set Cogeneration Company, Kern River Cogeneration Company, Sycamore Cogeneration Company, Sargent Canyon Cogeneration Company, Salinas River Cogeneration Company, Midway Sunset Cogeneration Company and Watson Cogeneration Company.

bottoming-cycle plants only produce an industrial commodity and electricity; they do not necessarily produce a useful thermal output in order to qualify as bottoming-cycle units. All of the energy input into the process is required for the production of the industrial commodity. From the production of that commodity, there is waste heat which the cogeneration facility captures to generate electricity. There is generally no useful thermal energy output of a bottoming-cycle plant, and the formula for calculating emissions from a cogenerator does not work for bottoming-cycle units. Specifically, Findings of Fact 88, 90, 112 and 113 should be revised or deleted.

II. DESCRIPTION OF BOTTOMING-CYCLE COGENERATION

One type of bottoming cycle cogeneration unit has been developed in conjunction with calcining facilities, and is used as an example in this pleading.

Calcining processes the petroleum coke which is a residual product from petroleum refining. The petroleum coke is heated and converted into a carbonate product which can be used in other industrial processes. The heat produced by calcining may be exhausted to the atmosphere as waste heat. Cogeneration captures that waste heat and uses it to generate electricity. Attached as Exhibit A is the process diagram for the BP Calciner at Wilmington, a bottoming cycle cogeneration facility. This was submitted to FERC as part of BP's certification of the calciner as a Qualifying Facility under PURPA.³

The right hand side of the diagram identifies the inputs to the kiln where the calcining occurs. In this case, the inputs are petroleum coke and 14.83 MMBtu/hr of natural gas. Part of the coke also burns when heated in the kiln and provides an additional 401.25 MMBtu/hr to the calcining process. Hot flue gas exits from the kiln.

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³ QF06-132-000, April 6, 2006.

This is a waste product of the process, and without cogeneration would be exhausted to the atmosphere. Calcining by itself produces no electricity. All of the natural gas input to the calcining process is necessary for the calcining and therefore the carbon emissions from the consumption of the natural gas should be entirely allocated to the industrial process.

Some calciners have added cogeneration technology. The process diagram for the BP Wilmington Calciner shows that the hot flue gas is then routed through a waste heat boiler, producing steam. The steam drives a steam turbine generator (STG) producing a total of 35 MW of electricity.

This diagram illustrates that all of the energy input to the process is consumed in calcining coke and producing a coke product. All of the natural gas is consumed in the calcining process regardless of whether the waste heat is subsequently utilized to generate electricity. There is no useful thermal energy output to an industrial process. The next section discusses the impact of these facts on the calculation of carbon emissions.

III. THE DECISION SHOULD INCLUDE AN ACCURATE COGENERATION CALCULATION FOR BOTTOMING-CYCLE FACILITIES

The Decision adopts a methodology for calculating the carbon emissions of a cogeneration facility using the total energy output of the facility both in electricity and thermal energy. As the Commission states in the Decision, the thermal output used in the calculation must be the "useful thermal output" as defined by FERC. FERC's definition of "useful thermal energy" and its treatment of bottoming-cycle cogeneration illustrates why the application of the Decision to bottoming-cycle units is unworkable.

FERC defines "useful thermal energy output" in 18 CFR §292.202 only for a topping cycle cogeneration facility. It does not define the term for a bottoming-cycle facility, because FERC recognized that a bottoming-cycle facility need not have a useful thermal output in order to qualify. Exhibit B is the certification filed at FERC by the BP Wilmington Calciner, 4 and in Section 11 where the form requests "useful thermal energy output" the response is "none."

Further, in 18 CFR §292.205, FERC sets both operating and efficiency standards for cogenerators to be certified as qualifying facilities under PURPA. The operating standard requires a minimum percentage of the total energy output to be in the form of thermal energy output. The standard in §292.205(a)(1) only applies to topping-cycle facilities. There is no operating standard requiring a minimum thermal energy output for bottoming-cycle facilities.

The efficiency standard requires the energy output to exceed a certain percentage of the energy input. For topping cycle units, the efficiency is determined based on both thermal and power outputs. But for bottoming-cycle units, there is an efficiency standard only for those units with gas-fired supplemental firing, and that efficiency standard is determined based only on the power output. In both of these standards, FERC recognizes that apart from the production of an industrial commodity, a bottoming-cycle plant only produces electricity, and there is generally no useful thermal output.

The lack of useful thermal output renders unworkable the formula in the Decision for calculating cogeneration emissions. The Decision adopts a formula for calculating the emission rate of a cogenerator using both the thermal and electrical energy outputs:

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Filed in Docket QF06-132-000, April 6, 2006.

TOTAL GHG EMISSIONS FROM COGENERATION FACILITY KWH ELECTRICITY + BTU THERMAL ENERGY (expressed in kWh)⁵

This formula does not readily apply to bottoming-cycle plants because such plants do not have "useful thermal output." The Decision relies on FERC's definition of "useful thermal energy output" as:

- (h) Useful thermal energy output of a topping-cycle cogeneration facility means the thermal energy:
 - (1) That is made available to an industrial or commercial process (net of any heat contained in condensate return and/or makeup water);
 - (2) That is used in a heating application (e.g., space heating, domestic hot water heating); or
 - (3) That is used in a space cooling application (i.e., thermal energy used by an absorption chiller).⁶

First, it is critical to note that FERC defines useful thermal output only for topping-cycle plants; there is no definition for bottoming-cycle plants. Second, the terms of the definition clearly exclude bottoming-cycle plants because such plants do not provide thermal energy to an industrial process or for space conditioning. Finding of Fact 112 should be deleted because the cogeneration calculation cannot be applied rationally to bottoming-cycle units even if the order of calculation is reversed.

If bottoming-cycle plants were forced to use the formula, there would be no amount of thermal energy included in the denominator. The result would be that the total emissions from the calcining operation would be assigned to the electricity

⁵ Interim Decision, § 4.9.1.1, p. 105.

¹⁸ CFR § 202(h). FERC regulations also refer to "useful thermal energy" in defining bottoming-cycle cogeneration facilities as follows: "Bottoming-cycle cogeneration facility means a cogeneration facility in which the energy input to the system is first applied to a *useful thermal energy* application or process, and at least some of the reject heat emerging from the application or process is then used for power production. (18 CFR § 292.202(e), emphasis added.) Cited in *Interim Decision*, p. 111.

generation. Because the emissions would be produced by the calcining operation regardless of whether any electricity was generated, this is an unreasonable result. All of the emissions created by the calcining operation should be assigned to that industrial process.

The Commission should grant rehearing and revise the Decision to provide a reasonable and rational treatment for bottoming-cycle cogeneration. A rational treatment would be to recognize that bottoming-cycle cogeneration, without supplemental firing, does not consume any fuel to generate electricity. This is demonstrated by the diagram in Exhibit A. All fuel is required for the industrial process, such as calcining, and would be consumed whether the generation was taking place or not. The emissions will occur whether an LSE procures electricity from the facility or not, and therefore it is not creating the risk of financial exposure that the EPS was designed to mitigate.

Recognizing that the electricity generation function in a bottoming-cycle unit does not consume any fuel, the Commission could find that this is not the type of "powerplant" the EPS was designed to regulate. The Commission could find that all of the emissions of the facility are attributable to the industrial process, and deem the electrical generation function to comply with the EPS. This would be comparable to the treatment given renewable technologies in the Decision.

SB 1368 applies the EPS to "powerplants." Although a bottoming-cycle plant is technically a powerplant because it generates electricity, the Commission could find as a matter of policy that the EPS does not achieve its purpose when applied to such cogeneration. Finding of Fact 88 should be deleted.

⁸ Interim Opinion, p. 116.

Some bottoming-cycle cogeneration facilities do utilize supplemental firing to produce additional electricity. In such cases, the EPS would be applied only to those emissions attributable to the supplemental firing. The emission rate would require a determination of the additional kilowatt-hours of generation produced by the supplemental firing. The total carbon produced by the gas consumed in the supplemental firing would be divided by the additional kwh to produce a rate of lbs/kwh for the supplemental firing. This would be consistent with FERC's determination of the efficiency standard for bottoming-cycle units, in 18 CFR §292.205(b).

IV. CONCLUSION

Bottoming-cycle cogeneration plants cannot be treated comparably with standard generators which devote all of their energy input to generating electricity. They also cannot be treated comparably with topping-cycle cogeneration units which produce both a useful thermal energy output and a power output. The Commission should recognize their unique characteristics, which are comparable to renewable technologies, and deem that they comply with the EPS. In addition, the formula for calculating emissions of generators generally should be clarified for those bottoming-cycle units that use supplemental firing, so that only the emissions attributable to the supplemental firing are

divided by the additional kwhs produced by the supplemental firing to produce an emissions rate.

February 26, 2007

Respectfully submitted,

Evelyn Kahl

Michael Alcantar

Donald Brookhyser

Alcantar & Kahl, LLP

Suite 2200

120 Montgomery St.

San Francisco, California 94000

Donald Brooklyse

415.421.4143 office

415.989.1263 fax

ek@a-klaw.com

mpa@a-klaw.com

deb@a-klaw.com

Exhibit A

Make up water

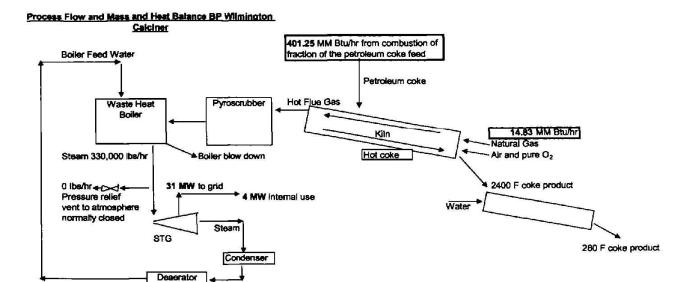


Exhibit B

ORIGINAL

FILED OFFICE OF THE SECRETARY

NOTICE OF SELF-CERTIFICATION OF QUALIFYING FACILITY STATUS FOR AN EXISTING COGENERATION FACILITY

25 APR -b P 3 25

FERC FORM 556

FEDERAL ENERGY
REGULATORY COMMISSION
Pursuant to 18 C.F.R. Section 292.207(a)(1), BP West Coast Products LLC Wilmington Calciner ("Calciner") hereby provides this notice of self-recertification of
its cogeneration facility located in Wilmington, California.

Part A General Information

QFU(-132-000

1. Applicant Information

1a. <u>Full Name:</u>

BP West Coast Products LLC - Wilmington Calciner

The immediately preceding submittal filed with the Commission in connection with the instant facility ("the Facility") was assigned Docket No. QF93-73-001 and Docket No. ER06-611-000 regarding the name change from Arco CQC Kiln to BP West Coast Products LLC – Wilmington Calciner. The purpose of this instant filing is to self-recertify the Facility as a Qualifying Facility pursuant to 18 CFR Section 292.207(a)(1) and to provide updates since the name change effective January 1, 2002, as provided in this Notice of Self-Recertification.

1b. Full Address of Applicant:

The name and address of the applicant are:

BP West Coast Products LLC - Wilmington Calciner Attn: Gregory A. Seybert Business Manager 1175 Carrack Avenue PO Box 1028

Wilmington, California 90748
Telephone: 562-499-3205
Facsimile: 562-499-3234
Email: seybga@bp.com

1c. Owners and Operators of Facility:

BP West Coast Products LLC - Wilmington Calciner (Calciner) is owned and operated by BP West Coast Products LLC, which is a direct, wholly-owned subsidiary

of BP Products North America Inc., which is a direct, majority-owned subsidiary of BP Company North America Inc., which is a direct, wholly-owned subsidiary of BP Corporation North America Inc., which, in turn, is a direct, wholly-owned subsidiary of BP America Inc., which is a direct, wholly-owned subsidiary of BP p.l.c. (BP). BP is a company organized under the laws of England and Wales with its international headquarters in London, United Kingdom and with affiliate offices in the United States in Chicago, Illinois, among other locations. The assets that make up the Facility consist of equipment and fixtures that are owned by BP West Coast Products LLC. All rights to control the Facility and to receive its stream of benefits reside with BP West Coast Products LLC. BP West Coast Products LLC is not an electric utility company, as defined in section 1262(5) of the Public Utility Holding Company Act of 2005, 42 U.S.C. 16451(5) and 18 CFR Section 366.1, and pursuant to 18 CFR Section 292.602(b), and is not a holding company, as defined in section 1262(8) of the Public Utility Holding Company Act of 2005, 42 U.S.C. 16451(8) and 18 CFR Section 366.1 and 18 CFR Section 292.202(n).

The top level parent company in the United States for BP West Coast Products LLC, BP America Inc., does NOT directly engage in the transmission or the retail distribution of electricity in North America.

However, other BP America Inc. subsidiaries include: 1) entities that own and/or operate other qualifying facilities (besides BP West Coast Products LLC – Wilmington Calciner) at refining, chemical and exploration and production facilities; 2) BP Energy Company, which is engaged in the marketing and trading of natural gas, electricity and other energy-related commodities, but which has no direct ownership or indirect ownership interests in any physical electric generation, transmission or distribution facilities; 3) BP America Production Company, which engages in the exploration and production of natural gas and oil, both onshore and offshore (and although some production facilities have on-site generation facilities that are integral to field operations, they are not interconnected with the grid); 4) BP Canada Energy Company, which owns small power generation facilities in Canada that are integral to gas plant processing facilities; 5) BP Solar International Inc., which manufactures and markets photovoltaic cells and modules and develops solar-powered electric generation facilities; and 6) BP Alternative Energy North America Inc., which will develop renewable and other low carbon power generation projects.

In addition, BP International Limited, a direct, wholly-owned subsidiary of BP, holds a 28 percent interest in Green Mountain Energy Company, which markets electricity to retail customers.

1d. Signature of authorized individual evidencing accuracy and authenticity of information provided by Applicant:

Gregory A. Seybert

2. Person to whom communications regarding the filed information may be addressed:

Gregory A. Seybert
BP West Coast Products LLC - Wilmington Calciner
Business Manager
1175 Carrack Avenue
PO Box 1028
Wilmington, California 90748
Telephone: 562 499 3205

Telephone: 562-499-3205
Facsimile: 562-499-3234
Email: 562-499-3234

3a. Location of Facility:

The Facility is located in Wilmington, California in the County of Los Angeles, and is located within the area operated by the California Independent System Operator (CAISO). The Facility is interconnected with Southern California Edison Company.

3b. Electric Utility Transactions with the Facility:

Southern California Edison Company provides supplementary power, backup power, maintenance power and/or interruptible power service.

4. Description of the Facility

4a. Description of Principal Components:

As stated in the April 5, 1993 Notice of Qualification as a Cogeneration Facility, pursuant to 18 CFR Section 292.201, et seq., the Facility is a bottoming-cycle cogeneration plant. The plant calcines petroleum coke to produce high quality carbon for the manufacture of aluminum and other industrial uses. The petroleum coke is heated on a rotating kiln to drive off moisture and volatile hydrocarbons. The waste heat produced by the burning of volatiles and coke dust is recovered in a

boiler which produces steam. The steam generated by the boiler is utilized by a turbine-generator unit to produce electricity.

4b. Electric Power Production Capability of the Facility:

The Facility has a maximum electrical capacity of 35 MWs.

4c. Actual/Expected Installation / Operation Dates of the Facility:

12-1982 to present

4d. Primary Energy Input to Facility:

The primary fuel or energy source for the Facility is petroleum coke.

5. Average Annual Hourly Energy Input of Fossil Fuel to the Facility:

The average annual hourly input energy in Btus is 416 MM Btu/hr petroleum coke and natural gas combined

6. Particular Characteristics of the Facility That Bear on Its OF Status:

None

Part B Description of the Small Power Production Facility Not Applicable

Part C Description of the Cogeneration Facility

9. Description of the Cogeneration Facility

The Facility is a bottoming-cycle cogeneration plant. The plant calcines petroleum coke to produce high quality carbon for the manufacture of aluminum and other industrial uses. The petroleum coke is heated on a rotating kiln to drive off moisture and volatile hydrocarbons. The waste heat produced by the burning of volatiles and coke dust is recovered in a boiler which produces steam. All the steam generated by the boiler is utilized by a turbine-generator unit to produce electricity.

10. Input Assumptions: Mass and Heat Balance Cycle Diagram:

A simplified process flow diagram also containing heat balance (cycle) information depicting average annual hourly operating conditions has been attached hereto as Exhibit 1.

Average net electric output: 31 MW

Average net mechanical output in horsepower: none

Facility operations are based on _ Average net steam out: _0 lbs/hr electricity)	• •	
11. Operating and Efficiency V	alues for the Facil	ity
The efficiency rating of the Facilit	y is calculated as fol	lows:
Useful Thermal Energy Output		n xBtu/LbHrs/Year MMBtu/Year
<i>Useful Power Output</i> = 35,000 kV	V x 3,412 Btu/kW x .	_7680Hr/yr.
=	917,146	MMBtu/Year
Total Energy Output = _917,146_	MMBtu/Yr +	MMBtu/Yr
= 917,146_	мм	Btu/Year
Total Energy Input =14.83_MMBt	u/Hr(HHV) x 7680 H	r/Yr (Natural Gas)
= 401.24 MMBtu/H	r (HHV) x 7680_ Hr/	Yr (Petroleum Coke)
= _3,195,404_MMB	Stu/Yr (HHV)	
Based on the above, the efficiency	y of the Facility is ap	proximately %.
The useful energy rating (Useful 1	hermal Energy Outp	out/Total Energy Input) is
approximately _ 28.7 %.	•	
12 Thermal Host for Eacility		

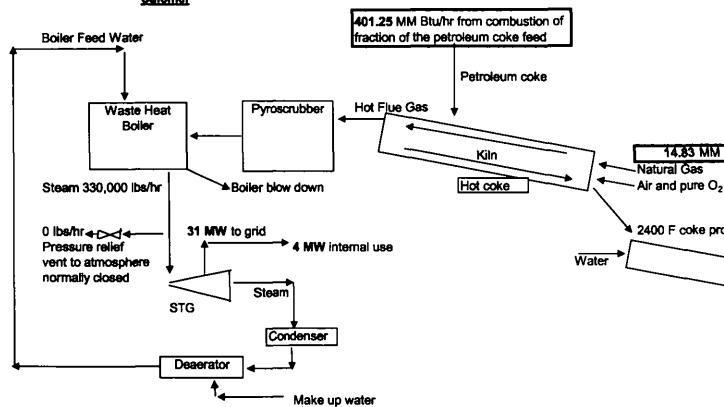
12. Thermal Host for Facility

Not applicable

Conclusion

Based on the foregoing, the Facility meets the requirements as a qualifying facility under 18 CFR Section 292.203(b).

<u>Process Flow and Mass and Heat Balance BP Wilmington</u> <u>Calciner</u>



CERTIFICATE OF SERVICE

I, Kari Harteloo, certify that I have caused the APPLICATION FOR REHEARING, OR IN THE ALTERNATIVE, PETITION FOR MODIFICATION OF THE ENERGY PRODUCERS AND USERS COALITION AND THE COGENERATION ASSOCIATION OF CALIFORNIA to be served in accordance with the Commission's rules.

Dated February 26, 2007, at Portland, Oregon.

Kari Harteloo

Kari Harteloo

CALIFORNIA PUBLIC UTILITIES COMMISSION **Service Lists**

Proceeding: R0604009 - CPUC - PG&E, SDG&E,

Filer: CPUC - PG&E, SDG&E, SOCALGAS, EDISON

List Name: LIST

Last changed: February 21, 2007

Appearance

ADRIAN PYE ADRIAN PYE
ENERGY AMERICA, LLC
ONE STAMFORD PLAZA, EIGHTH FLOOR
263 TRESSER BLVD.

PRAXAIR PLAINFIELD, INC.
2711 CENTERVILLE ROAD, SUITE 400
WILMINGTON, DE 19808 STAMFORD, CT 06901

RICK C. NOGER

KEITH R. MCCREA KEITH R. MCCREA

ATTORNEY AT LAW

SUTHERLAND, ASBILL & BRENNAN, LLP

1275 PENNSYLVANIA AVE., N.W.

MASHINGTON, DC 20005-3096 WASHINGTON, DC 20004-2415

MICHAEL A. YUFFEE

LISA M. DECKER

KEVIN BOUDREAUX CONSTELLATION ENERGY GROUP, INC.

111 MARKET PLACE, SUITE 500

RALTIMORE. MD 21202

CALPINE POWER AMERICA-CA, LLC
717 TEXAS AVENUE, SUITE 1000
HOUSTON, TX 77002

E.J. WRIGHT OCCIDENTAL POWER SERVICES, INC. 5 GREENWAY PLAZA, SUITE 110 HOUSTON, TX 77046

PAUL M. SEBY MCKENNA LONG & ALDRIDGE LLP 1875 LAWRENCE STREET, SUITE 200 DENVER, CO 80202

TIMOTHY R. ODIL MCKENNA LONG & ALDRIDGE LLP
1875 LAWRENCE STREET, SUITE 200 DENVER, CO 80202

ERIC GUIDRY
WESTERN RESOURCE ADVOCATES
2260 BASELINE ROAD, SUITE 200
BOULDER, CO 80304

JENINE SCHENK APS ENERGY SERVICES 400 E. VAN BUREN STREET, SUITE 750 SIERRA PACIFIC RESOURCES PHOENIX, AZ 85004

DARRELL SOYARS MANAGER-RESOURCE PERMITTING 6100 NEIL ROAD RENO, NV 89520-0024

DENNIS M.P. EHLING ATTORNEY AT LAW KIRKPATRICK & LOCKHART NICHOLSON GRAHAM 350 SOUTH GRAND AVENUE, SUITE 3800 10100 SANTA MONICA BLVD., 7TH FLOOR LOS ANGELES, CA 90071 LOS ANGELES, CA 90067

GREGORY KOISER CONSTELLATION NEW ENERGY, INC.

NORMAN A. PEDERSEN ATTORNEY AT LAW HANNA AND MORTON, LLP HANNA AND MORTON, LLP

444 SOUTH FLOWER STREET, NO. 1500

LOS ANGELES, CA 90071

3 PHASES ENERGY SERVICES, LLC
2100 SEPULVEDA BLVD., SUITE 38
MANHATTAN BEACH, CA 90266

MICHAEL MAZUR CHIEF TECHNICAL OFFICER

TIFFANY RAU

GREGORY KLATT POLICY AND COMMUNICATIONS MANAGER
CARSON HYDROGEN POWER PROJECT LLC
ONE WORLD TRADE CENTER, SUITE 1600
LONG BEACH, CA 90831-1600
ARCADIA, CA 91006

ATTORNEY AT LAW
DOUGLASS & LIDDELL
411 E HUNTINGTON DRIVE, STE 107-356
ARCADIA, CA 91006

MAUREEN LENNON
CALIFORNIA COGENERATION COUNCIL
595 EAST COLORADO BLVD., SUITE 623
PASADENA. CA 91101

RIGHARD M. 20
S CALIFORNIA PUBLIC POWER AUT
225 S. LAKE AVE., SUITE 1250
PASADENA, CA 91101 MAUREEN LENNON

RICHARD HELGESON S CALIFORNIA PUBLIC POWER AUTHORITY

DANIEL W. DOUGLASS ATTORNEY AT LAW DOUGLASS & LIDDELL 21700 OXNARD STREET, SUITE 1030 ALTA LOMA, CA 91737 WOODLAND HILLS, CA 91367

PAUL DELANEY AMERICAN UTILITY NETWORK (A.U.N.) 10705 DEER CANYON DRIVE

AKBAR JAZAYEIRI AKBAR JAZAYEIRI
DIRECTOR OF REVENUE & TARRIFFS
SOUTHERN CALIFORNIA EDISON COMPANY
2244 WALNUT GROVE AVE. ROOM 390 ROSEMEAD, CA 91770

ANNETTE GILLIAM ATTORNEY AT LAW SOUTHERN CALIFORNIA EDISON COMPANY 2244 WALNUT GROVE AVENUE ROSEMEAD, CA 91770

RONALD MOORE

DON WOOD

GOLDEN STATE WATER/DEAD VILLE AVENUE 4539 LEE AVENUE LA MESA, CA 91941 GOLDEN STATE WATER/BEAR VALLEY ELECTRIC PACIFIC ENERGY POLICY CENTER

ALLEN K. TRIAL SDGE&SCG HO-13 101 ASH STREET SAN DIEGO, CA 92101 DAN HECHT SEMPRA ENERGY 101 ASH STREET SAN DIEGO, CA 92101

DANIEL A. KING SEMPRA ENERGY SEMPRA ENERGY 101 ASH STREET, HQ13 SAN DIEGO, CA 92101

LISA G. URICK ATTORNEY AT LAW SAN DIEGO GAS & ELECTRIC COMPANY 101 ASH STREET SAN DIEGO, CA 92101

SYMONE VONGDEUANE

THEODORE ROBERTS SEMPRA ENERGY SOLUTIONS
101 ASH STREET, HQ09
SAN DIEGO, CA 92101-3017

THEODORE ROBERTS
ATTORNEY AT LAW
SEMPRA GLOBAL
101 ASH STREET, HQ 13D SAN DIEGO, CA 92101-3017

BILL LYONS CORAL POWER, LLC

THOMAS DARTON CORAL POWER, LLC

4445 EASTGATE MALL, SUITE 100

9320 CHESAPEAKE DRIVE, SUITE 112

SAN DIEGO, CA 92123

STEVE RAHON DIRECTOR, TARIFF & REGULATORY ACCOUNTS

SAN DIEGO GAS & ELECTRIC COMPANY

8330 CENTURY PARK COURT, CP32C

SAN DIEGO, CA 92123-1548

SIGNIA BRITTOR

ANZA ELECTRIC COOPERATIVE, INC.

58470 HWY 371

PO BOX 391909

ANZA, CA 92539

GLORIA BRITTON

LYNELLE LUND

COMMERCE ENERGY, INC.

600 ANTON BLVD., SUITE 2000

CITY OF CORONA

730 CORPORATION YARD WAY CORONA, CA 92880

TAMLYN M. HUNT ENERGY PROGRAM DIRECTOR JEANNE M. SOLE DEPUTY CITY ATTORNEY

COMMUNITY ENVIRONMENTAL COUNCIL

26 W. ANAPAMU ST., 2/F

SANTA BARBARA, CA 93101

CITY AND COUNTY OF SAN FRANCISCO

1 DR CARLTON B GOODLETT PLACE, #234

SAN FRANCISCO, CA 94102

LAD LORENZ

V.P. REGULATORY AFFAIRS

SOUTHERN CALIFORNIA GAS COMPANY

601 VAN NESS AVENUE, SUITE 2060

SAN FRANCISCO, CA 94102 LAD LORENZ SAN FRANCISCO, CA 94102

MARCEL HAWIGER

NINA SUETAKE

ATTORNEY AT LAW

THE UTILITY REFORM NETWORK
711 VAN NESS AVE., STE 350

SAN FRANCISCO, CA 94102

DIANA L. LEE

CALIF PUBLIC UTILITI

LEGAL DIVISION

ROOM 4300

505 VAN NESS AVENUE

SAN EDANGISCO CO CO

CALIF PUBLIC UTILITIES COMMISSION SAN FRANCISCO, CA 94102-3214

F. JACKSON STODDARD CALIF PUBLIC UTILITIES COMMISSION

NATURAL RESOURCES DEFENSE COUNCIL
LEGAL DIVISION

111 SUTTER STREET, 20TH FLOOR ROOM 5040 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

AUDREY CHANG SAN FRANCISCO, CA 94104

EVELYN KAHL ATTORNEY AT LAW

MICHAEL P. ALCANTAR ATTORNEY AT LAW

ALCANTAR & KAHL, LLP

120 MONTGOMERY STREET, SUITE 2200

SAN FRANCISCO, CA 94104

ATTORNEY AT LAW

ALCANTAR & KAHL, LLP

120 MONTGOMERY STREET, SUITE 2200

SAN FRANCISCO, CA 94104 ATTORNEY AT LAW

SEEMA SRINIVASAN

ATTORNEY AT LAW

ALCANTAR & KAHL, LLP

120 MONTGOMERY STREET, SUITE 2200

SAN FRANCISCO. CA 94104

CHRISTOPHER J. WARNER
PACIFIC GAS AND ELECTRIC COMPANY
77 BEALE STREET
SAN FRANCISCO, CA 94104 SAN FRANCISCO, CA 94104

EDWARD G POOLE

ANN G. GRIMALDI

MCKENNA LONG & ALDRIDGE LLP

601 CALIFORNIA STREET SUITE 1300

SAN FRANCISCO, CA 94108

ANN G. GRIMALDI

MCKENNA LONG & ALDRIDGE LLP

101 CALIFORNIA STREET, 41ST FLOOR

SAN FRANCISCO, CA 94111

BRIAN T. CRAGG ATTORNEY AT LAW GOODIN, MACBRIDE, SQUERI, RITCHIE & DAY GOODIN MACBRIDE SQUERI RITCHIE

JAMES D. SQUERI ATTORNEY AT LAW 505 SANSOME STREET, SUITE 900 505 SANSOME STREET, STE 900 SAN FRANCISCO, CA 94111 SAN FRANCISCO, CA 94111

JOSEPH M. KARP

ATTORNEY AT LAW

WINSTON & STRAWN LLP

101 CALIFORNIA STREET

SAN FRANCISCO, CA 94111

KAREN BOWEN

ATTORNEY AT LAW

WINSTON & STRAWN LLP

101 CALIFORNIA STREET

SAN FRANCISCO, CA 94111

LISA A. COTTLE ATTORNEY AT LAW
WINSTON & STRAWN LLP
COOPER, WHITE & COOPER, LLP
COOPER, WHITE & COOPE

SEAN P. BEATTY

JEFFREY P. GRAY JEFFREY P. GRAY

DAVIS WRIGHT TREMAINE, LLP

505 MONTGOMERY STREET, SUITE 800

SAN FRANCISCO, CA 94111-6533

SAN FRANCISCO, CA 94121

SARA STECK MYERS

LARS KVALE

BRIAN K. CHERRY LARS KVALE

CENTER FOR RESOURCE SOLUTIONS

PRESIDIO BUILDIING 97

PO BOX 39512

SAN FRANCISCO, CA 94129

BRIAN K. CHERRY

DIRECTOR REGULATORY RELATIONS

PACIFIC GAS AND ELECTRIC COMPANY

PO BOX 770000 MC B10C

SAN FRANCISCO, CA 94177-0001

ANDREA WELLER

JENNIFER CHAMBERLIN ANDREA WELLER

STRATEGIC ENERGY

STRATEGIC ENERGY, LLC

3130 D BALFOUR RD., SUITE 290

BRENTWOOD, CA 94513

JENNIFER CHAMBERLIN

STRATEGIC ENERGY, LLC

3130 D BALFOUR ROAD, STE 290

BRENTWOOD, CA 94513

KERRY HATTEVIK MIRANT CORPORATION 696 WEST 10TH STREET PITTSBURG, CA 94565

AVIS KOWALEWSKI CALPINE CORPORATION
3875 HOPYARD ROAD, SUITE 345
PLEASANTON, CA 94588

WILLIAM H. BOOTH
ATTORNEY AT LAW
CONSTELLATION NEW ENERGY, INC.
LAW OFFICES OF WILLIAM H. BOOTH
2175 N. CALIFORNIA BLVD., SUITE 300
1500 NEWELL AVENUE, 5TH FLOOR
WALNUT CREEK, CA 94596

WALNUT CREEK, CA 94596

J. ANDREW HOERNER REDEFINING PROGRESS 1904 FRANKLIN STREET OAKLAND, CA 94612

JANILL RICHARDS DEPUTY ATTORNEY GENERAL CALIFORNIA ATTORNEY GENERAL'S OFC 1515 CLAY STREET, 20TH FLOOR OAKLAND, CA 94702

CLIFF CHEN
UNION OF CONCERNED SCIENTIST
2397 SHATTUCK AVENUE, STE 203
BERKELEY, CA 94704

GREEN POWER INSTITUTE
2039 SHATTUCK AVENUE, STE 402
BERKELEY, CA 94704

JOHN GALLOWAY JOHN GALLOWAY
UNION OF CONCERNED SCIENTISTS
CROSSBORDER ENERGY
2397 SHATTUCK AVENUE, SUITE 203
BERKELEY, CA 94704
R. THOMAS BEACH
CROSSBORDER ENERGY
2560 NINTH STREET, SUITE 213A
BERKELEY, CA 94710

R. THOMAS BEACH

BARRY F. MCCARTHY SAN JOSE, CA 95113

C. SUSIE BERLIN ATTORNEY AT LAW ATTORNEY AT LAW

MCCARTHY & BERLIN, LLP

100 PARK CENTER PLAZA, SUITE 501

SAN JOSE, CA 95113 SAN JOSE, CA 95113

JOY A. WARREN ATTORNEY AT LAW MODESTO, CA 95352

BALDASSARO DI CAPO, ESQ. CALIFORNIA ISO ATTORNEY AT LAW

MODESTO IRRIGATION DISTRICT

PO BOX 4060

LEGAL AND REGULATORY DEPARTMENT
151 BLUE RAVINE ROAD FOLSOM, CA 95630

JOHN JENSEN PRESIDENT MOUNTAIN UTILITIES PO BOX 205 KIRKWOOD, CA 95646

MARY LYNCH CONSTELLATION ENERGY COMMODITIES 2377 GOLD MEDAL WAY GOLD RIVER, CA 95670

LEONARD DEVANNA

ANDREW BROWN EXECUTIVE VICE PRESIDENT

CLEAN ENERGY SYSTEMS, INC.

11330 SUNCO DRIVE, SUITE A

RANCHO CORDOVA, CA 95742

ANDREW BROWN

ATTORNEY AT LAW

ELLISON, SCHNEIDER & HARRIS, LLP

2015 H STREET

SACRAMENTO, CA 95814 BRUCE MCLAUGHLIN
BRAUN & BLAISING, P.C.
915 L STREET, SUITE 1420
SACRAMENTO, CA 95814

GREGGORY L. WHEATLAND ATTORNEY AT LAW ELLISON, SCHNEIDER & HARRIS, LLP 2015 H STREET SACRAMENTO, CA 95814

JANE E. LUCKHARDT ATTORNEY AT LAW DOWNEY BRAND LLP 555 CAPITOL MALL, 10TH FLOOR SACRAMENTO, CA 95814

JEDEDIAH J. GIBSON ATTORNEY AT LAW ELLISON, SCHNEIDER & HARRIS LLP 2015 H STREET SACRAMENTO, CA 95814

VIRGIL WELCH CLIMATE CAMPAIGN COORDINATOR
ENVIRONMENTAL DEFENSE
1107 9TH STREET, SUITE 540
SACRAMENTO, CA 95814

WILLIAM W. WESTERFIELD, III ATTORNEY AT LAW ELLISON, SCHNEIDER & HARRIS L.L.P. 2015 H STREET SACRAMENTO, CA 95814

DOWNEY BRAND JANE E. LUCKHARDT 555 CAPITOL MALL, 10TH FLOOR SACRAMENTO, CA 95814-4686

STEVEN M. COHN ASSISTANT GENERAL COUNSEL SACRAMENTO MUNICIPAL UTILITY DIST PO BOX 15830 SACRAMENTO, CA 95852-1830

ANN L. TROWBRIDGE ATTORNEY AT LAW
DAY CARTER & MURPHY, LLP 3620 AMERICAN RIVER DRIVE, SUITE 205 ALTURAS, CA 96101 SACRAMENTO, CA 95864

DAN SILVERIA SURPKIDE PO BOX 691 SURPRISE VALLEY ELECTRIC CO-OP

JESSICA NELSON

PLUMAS-SIERRA RURAL ELECTRIC CO-OP

73233 STATE ROUTE 70, STE A

1300 SW FIFTH AVE., SUITE 1750

PORTLAND, OR 97210

KYLE L. DAVIS PACIFICORP 825 NE MULTNOMAH, PORTLAND, OR 97232

NATALIE HOCKEN, ESQ. PACIFICORP LLOYD CENTER TOWER 825 NE MULTNOMAH PORTLAND, OR 97232

SHAY LABRAY MANAGER, REGULATORY PACIFICORP AVISTA UTILITIES
825 NE MULTNOMAH, SUITE 2000 PO BOX 3727, MSC-29
PORTLAND, OR 97232 SPOKANE, WA 99220-3727

KELLY NORWOOD RATES AND REGULATION DEPARTMENT

IAN CARTER POLICY COORDINATOR-NORTH AMERICA INTERNATIONAL EMISSIONS TRADING ASSN. 350 SPARKS STREET, STE. 809 OTTAWA, ON K1R 7S8 CANADA

Information Only

CAROL JOLLY PO BOX 585 CHESTERFIELD, MA 01012

BRIAN M. JONES M. J. BRADLEY & ASSOCIATES, INC. 47 JUNCTION SQUARE DRIVE CONCORD, MA 01742

RICHARD COWART REGULATORY ASSISTANCE PROJECT 50 STATE STREET, SUITE 3 MONTPELIER, VT 05602

GEORGE HOPLEY BARCLAYS CAPITAL 200 PARK AVENUE NEW YORK, NY 10166

STEVEN S. SCHLEIMER DIRECTOR, COMPLIANCE & REGULATORY AFFAIRS MORGAN STANLEY CAPITAL GROUP INC. 200 PARK AVENUE, FIFTH FLOOR BARCLAYS BANK, PLC NEW YORK, NY 10166

STEVEN HUHMAN 2000 WESTCHESTER AVENUE PURCHASE, NY 10577

ADAM J. KATZ WASHINGTON, DC 20005

ERIN M. MURPHY MCDERMOTT WILL & EMERY LLP

600 13TH STREET, NW.

600 THIRTEENTH STREET, N.W. WASHINGTON, DC 20005

DALLAS BURTRAW 1616 P STREET, NW

VERONIQUE BUGNION POINT CARBON

WASHINGTON, DC 20036

205 SEVERN RIVER RD SEVERNA PARK, MD 21146

KYLE D. BOUDREAUX FPL GROUP 700 UNIVERSE BLVD., JES/JB JUNO BEACH, FL 33408

GARY BARCH FELLON-MCCORD & ASSOCIATES, INC. SUITE 2000 9960 CORPORATE CAMPUS DRIVE LOUISVILLE, KY 40223

RALPH E. DENNIS DIRECTOR, REGULATORY AFFAIRS

FELLON-MCCORD & ASSOCIATES

9960 CORPORATE CAMPUS DRIVE, STE 2000

CATHY S. WOOLLOMS

MIDAMERICAN ENERGY HOLDINGS COMPANY

106 EAST SECOND STREET

DAVENPORT, IA 52801 LOUISVILLE, KY 40223

CATHY S. WOOLLUMS

BRIAN POTTS SUITE 700 ONE SOUTH PINCKNEY STREET MADISON, WI 53703

JAMES ROSS RCS, INC. 500 CHESTERFIELD CENTER, SUITE 320 CHESTERFIELD, MO 63017

GARY HINNERS RELIANT ENERGY, INC. PO BOX 148 HOUSTON, TX 77001-0148

NICHOLAS LENSSEN ENERGY INSIGHTS 1750 14TH STREET, SUITE 200 BOULDER, CO 80302

STEVEN MICHEL WESTERN RESOURCE ADVOCATES
2260 BASELINE RD., STE. 200 BOULDER, CO 80302

KEVIN J. SIMONSEN ENERGY MANAGEMENT SERVICES 646 EAST THIRD AVENUE DURANGO, CO 81301

BRIAN MCQUOWN RELIANT ENERGY 7251 AMIGO ST., SUITE 120 LAS VEGAS, NV 89119

DOUGLAS BROOKS NEVADA POWER COMPANY SIERRA PACIFIC POWER COMPANY 6226 WEST SAHARA AVENUE LAS VEGAS, NV 89151

CYNTHIA MITCHELL ENERGY ECONOMICS, INC. 530 COLGATE COURT

CHRISTOPHER A. HILEN ASSISTANT GENERAL COUNSEL SIERRA PACIFIC POWER COMPANY RENO, NV 89503

6100 NEIL ROAD RENO, NV 89511

ELENA MELLO SIERRA PACIFIC POWER COMPANY 6100 NEIL ROAD RENO, NV 89520

TREVOR DILLARD SIERRA PACIFIC POWER COMPANY 6100 NEIL ROAD RENO, NV 89520

FRANK LUCHETTI NEVADA DIV. OF ENVIRONMENTAL 1001 901 S. STEWART ST., SUITE 4001 111 NORTH HOPE STREET, LOS ANGELES, CA 90012 NEVADA DIV. OF ENVIRONMENTAL PROTECTION LA DEPARTMENT OF WATER & POWER

ROBERT L. PETTINATO 111 NORTH HOPE STREET, SUITE 1150

RASHA PRINCE SAN DIEGO GAS & ELECTRIC

555 WEST 5TH STREET, GT14D6

LOS ANGELES, CA 90013

CORTIS E. REBLER

J. ARON & COMPANY

2121 AVENUE OF THE STARS

LOS ANGELES, CA 90067

CURTIS L. KEBLER

DANIEL FEIT J. ARON & COMPANY 2121 PARK AVENUE LOS ANGELES, CA 90067

MICHAEL MCCORMICK CALIFORNIA CLIMATE ACTION REGISTRY 515 S. FLOWER ST. SUITE 1640 LOS ANGELES, CA 90071

MIKE SANDLER 4731 LA VILLA MARINA, UNIT B MARINA DEL REY, CA 90292

HARVEY EDER PUBLIC SOLAR POWER COALITION 1218 12TH ST., 25 SANTA MONICA, CA 90401

RACHEL MCMAHON SENIOR POLICY ASSOCIATE GLOBAL GREEN USA 2218 MAIN STREET SANTA MONICA, CA 90404

STEVE ENDO DEPARTMENT OF WATER & POWER 45 EAST GLENARM STREET PASADENA, CA 91105

STEVEN G. LINS CITY OF GLENDALE OFFICE OF THE CITY ATTORNEY
613 EAST BROADWAY, SUITE 220

TOM HAMILTON MANAGING PARTNER ENERGY CONCIERGE SERVICES 321 MESA LILA RD

GLENDALE, CA 91206-4394 GLENDALE, CA 91208

BURBANK, CA 91502

ROGER PELOTE THE WILLIAMS COMPANY, INC. 12736 CALIFA STREET VALLEY VILLAGE, CA 91607

CASE ADMINISTRATION SOUTHERN CALIFORNIA EDISON COMPANY

2244 WALNUT GROVE AVE., RM. 370

ROSEMEAD, CA 91770

ROSEMEAD, CA 91770

ROSEMEAD, CA 92008

TIM HEMIG

BARRY LOVELL 15708 POMERADO RD., SUITE 203 POWAY, CA 92064

ADRIAN E. SULLIVAN SEMPRA ENERGY REGULATORY LAW DEPARTMENT 101 ASH STREET, HQ13D SAN DIEGO, CA 92101

AIMEE M. SMITH ATTORNEY AT LAW SEMPRA ENERGY 101 ASH STREET HQ13 SAN DIEGO, CA 92101

DONALD C. LIDDELL, P.C. DOUGLASS & LIDDELL 2928 2ND AVENUE SAN DIEGO, CA 92103

YVONNE GROSS REGULATORY POLICY MANAGER SEMPRA ENERGY HO08C 101 ASH STREET SAN DIEGO, CA 92103

JOHN LAUN APOGEE INTERACTIVE, INC. 1220 ROSECRANS ST., SUITE 308 SAN DIEGO, CA 92106

SCOTT J. ANDERS

RESEARCH/ADMINISTRATIVE DIRECTOR

UNIVERSITY OF SAN DIEGO SCHOOL OF LAW

SAN DIEGO, CA 92123

SCOTT J. ANDERS

JACK BURKE

SAN DIEGO REGIONAL ENERGY OFFICE

8690 BALBOA AVE., SUITE 100

SAN DIEGO, CA 92123 SAN DIEGO, CA 92110

JENNIFER PORTER POLICY ANALYST SAN DIEGO, CA 92123

SEPHRA A. NINOW RESEARCH ASSISTANT SAN DIEGO REGIONAL ENERGY OFFICE SAN DIEGO REGIONAL ENERGY OFFICE 8690 BALBOA AVENUE, SUITE 100 SAN DIEGO, CA 92123

JOHN W. LESLIE ATTORNEY AT LAW LUCE, FORWARD, HAMILTON & SCRIPPS, LLP

11988 EL CAMINO REAL, SUITE 200

SAN DIEGO, CA 92130

HORTON, KNOX, CARTER & FOOTE
895 BROADWAY, SUITE 101
EL CENTRO, CA 92243

ORLANDO B. FOOTE, III ATTORNEY AT LAW

ELSTON K. GRUBAUGH

IMPERIAL IRRIGATION DISTRICT

333 EAST BARIONI BLVD.

TMPERIAL, CA 92251

CLEAN POWER MARKETS, INC.
PO BOX 3206

418 BENVENUE AVENUE LOS ALTOS, CA 94024

GLORIA D. SMITH ADAMS, BROADWELL, JOSEPH & CARDOZO

601 GATEWAY BLVD., SUITE 1000

SOUTH SAN FRANCISCO, CA 94080

ADAMS BRADWELL JOSEPH & CARDOZO

601 GATEWAY BLVD. STE 1000

SOUTH SAN FRANCISCO, CA 94080

MARC D. JOSEPH

DIANE I. FELLMAN ATTORNEY AT LAW LAW OFFICES OF DIANE I. FELLMAN

234 VAN NESS AVENUE

SAN FRANCISCO, CA 94102

ATTORNET AT LAW

ATTORNET AT LAW

THE UTILITY REFORM NETWORK

711 VAN NESS AVENUE, SUITE 350

SAN FRANCISCO, CA 94102

HAYLEY GOODSON ATTORNEY AT LAW

MATTHEW FREEDMAN
ATTORNEY AT LAW
ATTORNEYS AT LAW
THE UTILITY REFORM NETWORK
711 VAN NESS AVENUE, SUITE 350
SAN FRANCISCO, CA 94102 MATTHEW FREEDMAN SAN FRANCISCO, CA 94102

MICHEL FLORIO 711 VAN NESS AVE., STE. 350

DAN ADLER

POWER ENTERPRISE-REGULATORY AFFAIRS

SAN FRANCISCO PUBLIC UTILITIES COMM

1155 MARKET ST., 4TH FLOOR

SAN FRANCISCO CA 9/103

DAN ADLER

DIRECTOR, TECH AND POLICY DEVEL

CALIFORNIA CLEAN ENERGY FUND

582 MARKET ST., SUITE 1015 MICHAEL A. HYAMS SAN FRANCISCO, CA 94103

DAN ADLER SAN FRANCISCO, CA 94104

DEVRA WANG NATURAL RESOURCES DEFENSE COUNCIL
111 SUTTER STREET, 20TH FLOOR
SAN FRANCISCO, CA 94104

NATURAL RESOURCES DEFENSE COUNCIL
111 SUTTER STREET, 20TH FLOOR
SAN FRANCISCO, CA 94104

ERIC WANLESS

KAREN TERRANOVA

ALCANTAR & KAHL, LLP

120 MONTGOMERY STREET, STE 2200

SAN FRANCISCO, CA 94104

ATTORNEY AT LAW

ALCANTAR & KAHL, LLP

120 MONTGOMERY STREET, SUITE 2200

SAN FRANCISCO, CA 94104

OLOF BYSTROM

DIRECTOR, WESTERN ENERGY

CAMBRIDGE ENERGY RESEARCH ASSOCIATES

555 CALIFORNIA STREET, 3RD FLOOR

SAN FRANCISCO, CA 94104 OLOF BYSTROM SAN FRANCISCO, CA 94104

SHERYL CARTER

COLIN PETHERAM
DIRECTOR-REGULATORY SBC CALIFORNIA 140 NEW MONTGOMERY ST., SUITE 1325 SPEAR STREE TOWER, SUITE 1200 SAN FRANCISCO, CA 94105 ONE MARKET STREET

DEBORAH BROCKETT CONSULTANT NAVIGANT CONSULTING, INC. SAN FRANCISCO, CA 94105

KHURSHID KHOJA ASSOCIATE THELEN REID BROWN RAYSMAN & STEINER

101 SECOND STREET, SUITE 1800

SAN FRANCISCO, CA 94105

THELEN REID BROWN RAYSMAN & STEINER

MAIL CODE B9A

77 BEALE STREET, RM. 996B

SAN FRANCISCO, CA 94105

STEPHANIE LA SHAWN PACIFIC GAS AND ELECTRIC COMPANY

NORMAN J. FURUTA ATTORNEY AT LAW CALIFORNIA ENERGY MAR FEDERAL EXECUTIVE AGENCIES 517-B POTRERO AVENUE 333 MARKET STREET, 10TH FLOOR, MS 1021A SAN FRANCISCO, CA 94110 SAN FRANCISCO, CA 94105-2195

CALIFORNIA ENERGY MARKETS

HOWARD V. GOLUB

JANINE L. SCANCARELLI

NIXON PEABODY LLP

EMBARCADERO CENTER, STE. 2700

SAN FRANCISCO, CA 94111

JANINE L. SCANCARELLI

FOLGER LEVIN & KAHN LLP

275 BATTERY STREET, 23RD FLOOR

SAN FRANCISCO, CA 94111 JANINE L. SCANCARELLI

JOSEPH F. WIEDMAN ATTORNEY AT LAW GOODIN MACBRIDE SQUERI RITCHIE & DAY, LLP 50 CALIFORNIA STREET, 34TH FLOOR 505 SANSOME STREET, SUITE 900 SAN FRANCISCO, CA 94111 SAN FRANCISCO, CA 94111

MARTIN A. MATTES NOSSAMAN, GUTHNER, KNOX & ELLIOTT JEN MCGRAW CENTER FOR NEIGHBORHOOD TECHNOLOGY PO BOX 14322 SAN FRANCISCO, CA 94114

LISA WEINZIMER CALIFORNIA ENERGY REPORTER PLATTS 695 NINTH AVENUE, NO. 2 SAN FRANCISCO, CA 94118

STEVEN MOSS SAN FRANCISCO COMMUNITY POWER COOP 2183 UNION STREET 2325 3RD STREET, SUITE 344 SAN FRANCISCO, CA 94123 SAN FRANCISCO, CA 94120

SHAUN ELLIS

ARNO HARRIS RECURRENT ENERGY, INC. 220 HALLECK ST., SUITE 220 SAN FRANCISCSO, CA 94129

DAREN CHAN PO BOX 770000, MAIL CODE B9A SAN FRANCISCO, CA 94177

ED LUCHA PROJECT COORDINATOR

GRACE LIVINGSTON-NUNLEY ASSISTANT PROJECT MANAGER PACIFIC GAS AND ELECTRIC COMPANY
PO BOX 770000, MAIL CODE: B9A
SAN FRANCISCO, CA 94177

PACIFIC GAS AND ELECTRIC COMPANY
PO BOX 770000 MAIL CODE B9A
SAN FRANCISCO, CA 94177

JASMIN ANSAR PG&E MAIL CODE B24A PO BOX 770000 SAN FRANCISCO, CA 94177

JONATHAN FORRESTER PG&E MAIL CODE N13C PO BOX 770000 SAN FRANCISCO, CA 94177

SEBASTIEN CSAPO PROJECT MANAGER PACIFIC GAS AND ELECTRIC COMPANY MAIL CODE B9A MAIL CODE B9A PO BOX 770000 SAN FRANCISCO, CA 94177

SOUMYA SASTRY PACIFIC GAS AND ELECTRIC COMPANY PO BOX 770000 SAN FRANCISCO, CA 94177

VALERIE J. WINN PACIFIC GAS AND ELECTRIC COMPANY PO BOX 770000, B9A SAN FRANCISCO, CA 94177-0001

GREG BLUE 140 MOUNTAIN PKWY. CLAYTON, CA 94517 DEAN R. TIBBS PRESIDENT ADVANCED ENERGY STRATEGIES, INC. 12 LIND COURT 1390 WILLOW PASS ROAD, SUITE 610 ORINDA, CA 94563 CONCORD, CA 94520

ANDREW J. VAN HORN VAN HORN CONSULTING

JOSEPH M. PAUL SENIOR CORPORATE COUNSEL DYNEGY, INC. 2420 CAMINO RAMON, SUITE 215 SAN RAMON, CA 94583

MONICA A. SCHWEBS, ESQ. BINGHAM MCCUTCHEN LLP SUITE 210 1333 N. CALIFORNIA BLVD. WALNUT CREEK, CA 94596

WILLIAM F. DIETRICH ATTORNEY AT LAW DIETRICH LAW 2977 YGNACIO VALLEY ROAD, 613 WALNUT CREEK, CA 94598-3535

JODY S. LONDON JODY LONDON CONSULTING PO BOX 3629 OAKLAND, CA 94609

MRW & ASSOCIATES, INC. 1815 BLAKE ST., APT. A 1814 FRANKLIN STREET, SUITE 720 BERKELEY, CA 94703 MRW & ASSOCIATES, INC. OAKLAND, CA 94612

CARLA PETERMAN

REED V. SCHMIDT VICE PRESIDENT BARTLE WELLS ASSOCIATES 1889 ALCATRAZ AVENUE BERKELEY, CA 94703

CLYDE MURLEY CONSULTANT 600 SAN CARLOS AVENUE ALBANY, CA 94706

BRENDA LEMAY DIRECTOR OF PROJECT DEVELOPMENT HORIZON WIND ENERGY 1600 SHATTUCK, SUITE 222 BERKELEY, CA 94709

EDWARD VINE LAWRENCE BERKELEY NATIONAL LAB BUILDING 90-4000 BERKELEY, CA 94720

RYAN WISER BERKELEY LAB MS-90-4000 ONE CYCLOTRON ROAD BERKELEY, CA 94720

PHILLIP J. MULLER SCD ENERGY SOLUTIONS 436 NOVA ALBION WAY SAN RAFAEL, CA 94903

CARL PECHMAN

KENNY SWAIN

POWER ECONOMICS 901 CENTER STREET SANTA CRUZ, CA 95060 POWER ECONOMICS 901 CENTER STREET SANTA CRUZ, CA 95060

MAHLON ALDRIDGE ECOLOGY ACTION PO BOX 1188 SANTA CRUZ, CA 95060

RICHARD SMITH MODESTO IRRIGATION DISTRICT 1231 11TH STREET MODESTO, CA 95352-4060

CHRISTOPHER J. MAYER MODESTO IRRIGATION DISTRICT 1231 11TH STREET MODESTO, CA 95354

ROGER VANHOY MODESTO IRRIGATION DISTRICT 1231 11TH STREET MODESTO, CA 95354

BARBARA R. BARKOVICH
BARKOVICH & YAP, INC.
44810 ROSEWOOD TERRACE MENDOCINO, CA 95460

JOHN R. REDDING ARCTURUS ENERGY CONSULTING 44810 ROSEWOOD TERRACE MENDOCINO, CA 95460

CLARK BERNIER RLW ANALYTICS 1055 BROADWAY, SUITE G SONOMA, CA 95476

RICHARD MCCANN, PH.D M. CUBED 2655 PORTAGE BAY, SUITE 3 DAVIS, CA 95616

CAROLYN M. KEHREIN ENERGY MANAGEMENT SERVICES 1505 DUNLAP COURT DIXON, CA 95620-4208

CALIFORNIA ISO LEGAL AND REGULATORY DEPARTMENT 151 BLUE RAVINE ROAD FOLSOM, CA 95630

GRANT ROSENBLUM, ESQ. CALIFORNIA ISO

LEGAL AND REGULATORY DEPARTMENT

110 BLUE RAVINE RI
FOLSOM, CA 95630 FOLSOM, CA 95630

SAEED FARROKHPAY FEDERAL ENERGY REGULATORY COMM 110 BLUE RAVINE RD., SUITE 107

DAVID BRANCHCOMB BRANCHCOMB ASSOCIATES, LLC

LAURIE PARK NAVIGANT CONSULTING, INC. 9360 OAKTREE LANE ORANGEVILLE, CA 95662

3100 ZINFANDEL DRIVE, SUITE 600 RANCHO CORDOVA, CA 95670-6078

SCOTT TOMASHEFSKY NORTHERN CALIFORNIA POWER AGENCY 180 CIRBY WAY ROSEVILLE, CA 95678-6420

ELLEN WOLFE RESERO CONSULTING 9289 SHADOW BROOK PL. GRANITE BAY, CA 95746

LS POWER GENERATION
980 NINTH STREET, SUITE 1
SACRAMENTO CA 95014 AUDRA HARTMANN SACRAMENTO, CA 95814

CURT BARRY 717 K STREET, SUITE 503 SACRAMENTO, CA 95814

STEVEN KELLY

EDWARD J. TIEDEMANN INDEPENDENT ENERGY PRODUCERS ASSN

1215 K STREET, SUITE 900

SACRAMENTO, CA 95814-3947

KRONICK, MOSKOVITZ, TIEDEMANN
400 CAPITOL MALL, 27TH FLOOR
SACRAMENTO, CA 95814-4416

LYNN HAUG ELLISON, SCHNEIDER & HARRIS, LLP 2015 H STREET SACRAMENTO, CA 95816

BUD BEEBE SACRAMENTO MUNICIPAL UTIL DIST MS B257 6201 S STREET SACRAMENTO, CA 95817-1899

BALWANT S. PUREWAL DEPARTMENT OF WATER RESOURCES 3310 EL CAMINO AVE., LL-90 SACRAMENTO, CA 95821

HOLLY B. CRONIN STATE WATER PROJECT OPERATIONS DIV CALIFORNIA DEPT OF WATER RESOURCES 3310 EL CAMINO AVE., LL-90 SACRAMENTO, CA 95821

KAREN NORENE MILLS SACRAMENTO, CA 95833

KAREN LINDH ATTORNEY AT LAW

CALIFORNIA FARM BUREAU FEDERATION
2300 RIVER PLAZA DRIVE
ANTELOPE, CA 95843

DENISE HILL DIRECTOR 4004 KRUSE WAY PLACE, SUITE 150 65 SW YAMHILL STREET, SUITE 400

ALEXIA C. KELLY THE CLIMATE TRUST LAKE OSWEGO, OR 97035 PORTLAND, OR 97204

KEVIN FOX STOEL RIVES LLP 900 SW FIFTH AVENUE, SUITE 2600 PORTLAND, OR 97204

ANNIE STANGE ALCANTAR & KAHL 1300 SW FIFTH AVE., SUITE 1750 PORTLAND, OR 97210

ALAN COMNES WEST COAST POWER 3934 SE ASH STREET PORTLAND, OR 97214

MARK C. TREXLER TREXLER CLIMATE+ENERGY SERVICES 529 SE GRAND AVE, M SUITE 300 PORTLAND, OR 97214-2232

SAM SADLER OREGON DEPARTMENT OF ENERGY 625 NE MARION STREET SALEM, OR 97301-3737

LISA SCHWARTZ SENIOR ANALYST ORGEON PUBLIC UTILITY COMMISSION PO BOX 2148 SALEM, OR 97308-2148

CLARE BREIDENICH 224 1/2 24TH AVENUE EAST SEATTLE, WA 98112

JESUS ARREDONDO NRG ENERGY INC. 4600 CARLSBAD BLVD. CARLSBAD, CA 99208

KAREN MCDONALD POWEREX CORPORATION 1400, 666 BURRAND STREET VANCOUVER, BC V6C 2X8 CANADA

State Service

JAMES LOEWEN CALIF PUBLIC UTILITIES COMMISSION RATEMAKING BRANCH 320 WEST 4TH STREET SUITE 500 LOS ANGELES, CA 90013

ANDREW CAMPBELL CALIF PUBLIC UTILITIES COMMISSION EXECUTIVE DIVISION ROOM 5304 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

ANNE GILLETTE CALIF PUBLIC UTILITIES COMMISSION CALIF PUBLIC UTILITIES COMMISSION ENERGY RESOURCES BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

CHRISTINE S. TAM CALIF PUBLIC UTILITIES COMMISSION CALIF PUBLIC UTILITIES COMMISSION ELECTRICITY RESOURCES & PRICING BRANCH ELECTRICITY RESOURCES & PRICING ROOM 4209 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

ED MOLDAVSKY CALIF PUBLIC UTILITIES COMMISSION LEGAL DIVISION ROOM 5125 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

HARVEY Y. MORRIS CALIF PUBLIC UTILITIES COMMISSION LEGAL DIVISION ROOM 5036 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

JEORGE S. TAGNIPES CALIF PUBLIC UTILITIES COMMISSION ENERGY RESOURCES BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

JONATHAN LAKRITZ CALIF PUBLIC UTILITIES COMMISSION

DIVISION OF ADMINISTRATIVE LAW JUDGES

CODITI TRUE

CALIF PUBLIC UTILITIES COMMISSION

ENERGY RESOURCES BRANCH ROOM 5020 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

JULIE A. FITCH CALIF PUBLIC UTILITIES COMMISSION

DIVISION OF STRATEGIC PLANNING

DIVISION OF STRATEGIC PLANNING

DOOM 5119 ROOM 5203 505 VAN NESS AVENUE

CHARLOTTE TERKEURST DIV OF ADMINISTRATIVE LAW JUDGES ROOM 5117 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

DONALD R. SMITH ROOM 4209 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

EUGENE CADENASSO CALIF PUBLIC UTILITIES COMMISSION RATEMAKING BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

JACLYN MARKS CALIF PUBLIC UTILITIES COMMISSION ENERGY RESOURCES BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

JOEL T. PERLSTEIN CALIF PUBLIC UTILITIES COMMISSION LEGAL DIVISION ROOM 5133 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

JUDITH IKLE ROOM 4012 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

KRISTIN RALFF DOUGLAS ROOM 5119 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214 SAN FRANCISCO, CA 94102-3214 LAINIE MOTAMEDI CALIF PUBLIC UTILITIES COMMISSION DIVISION OF STRATEGIC PLANNING ROOM 5119 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

MEG GOTTSTEIN CALIF PUBLIC UTILITIES COMMISSION DIVISION OF ADMINISTRATIVE LAW JUDGES ENERGY RESOURCES BRANCH ROOM 2106 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

NANCY RYAN CALIF PUBLIC UTILITIES COMMISSION EXECUTIVE DIVISION ROOM 5217 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

SARA M. KAMINS CALIF PUBLIC UTILITIES COMMISSION ENERGY RESOURCES BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

STEVE ROSCOW CALIF PUBLIC UTILITIES COMMISSION RATEMAKING BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

THERESA CHO CALIF PUBLIC UTILITIES COMMISSION EXECUTIVE DIVISION ROOM 5207 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

KEN ALEX PO BOX 944255 1300 I STREET, SUITE 125 SACRAMENTO, CA 94244-2550

MATTHEW DEAL CALIF PUBLIC UTILITIES COMMISSION ENERGY RESOURCES BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

MERIDETH STERKEL CALIF PUBLIC UTILITIES COMMISSION AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

PAUL S. PHILLIPS CALIF PUBLIC UTILITIES COMMISSION ELECTRICITY RESOURCES & PRICING ROOM 4101 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

SCOTT MURTISHAW CALIF PUBLIC UTILITIES COMMISSION ENERGY RESOURCES BRANCH AREA 4-A 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

SUZY HONG CALIF PUBLIC UTILITIES COMMISSION LEGAL DIVISION ROOM 5037 505 VAN NESS AVENUE SAN FRANCISCO, CA 94102-3214

BILL LOCKYER STATE ATTORNEY GENERAL CALIFORNIA DEPT OF JUSTICE PO BOX 944255 SACRAMENTO, CA 94244-2550

JUDITH B. SANDERS ATTORNEY AT LAW CA INDEPENDENT SYSTEM OPERATOR CA INDEPENDENT SYSTEM
151 BLUE RAVINE ROAD FOLSOM, CA 95630

JULIE GILL

MARY MCDONALD

EXTERNAL AFFAIRS MANAGER CALIFORNIA INDEPENDENT SYSTEM OPERATOR CA INDEPENDENT SYSTEM OPERATOR 151 BLUE RAVINE ROAD FOLSOM, CA 95630

DIRECTOR OF STATE AFFAIRS 151 BLUE RAVINE ROAD FOLSOM, CA 95630

PHILIP D. PETTINGILL CALIFORNIA INDEPENDENT SYSTEM OPERATOR DEPUTY EXECUTIVE OFFICER 151 BLUE RAVINE ROAD FOLSOM, CA 95630

MICHAEL SCHEIBLE CALIFORNIA AIR RESOURCES BOARD 1001 I STREET SACRAMENTO, CA 95677

MEG GOTTSTEIN

ADMINISTRATIVE LAW JUDGE

PO BOX 210/21496 NATIONAL STREET

AIR RESOURCES BOAD

1001 I STREET, BOX 2815 MEG GOTTSTEIN VOLCANO, CA 95689

PAM BURMICH SACRAMENTO, CA 95812

B. B. BLEVINS B. B. BLEVINS
EXECUTIVE DIRECTOR

DEBORAH SLON B. B. BLEVINS

EXECUTIVE DIRECTOR

CALIFORNIA ENERGY COMMISSION

1516 9TH STREET, MS-39

SACRAMENTO, CA 95814

DEBUKAH SLON

DEPUTY ATTORNEY GENERAL, ENVIRO
OFFICE OF THE ATTORNEY GENERAL
1300 I STREET, 15TH FLOOR
SACRAMENTO, CA 95814

DON SCHULTZ DON SCHULTZ KAREN GRIFFIN
CALIF PUBLIC UTILITIES COMMISSION EXECUTIVE OFFICE ELECTRICITY RESOURCES & PRICING BRANCH
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

CALIFORNIA ENERGY COMMISSION
1516 9TH STREET, MS 39
SACRAMENTO, CA 95814

KAREN GRIFFIN

LISA DECARLO STAFF COUNSEL CALIFORNIA ENERGY COMMISSION 1516 9TH STREET MS-14 SACRAMENTO, CA 95814

MICHELLE GARCIA AIR RESOURCES BOARD 1001 1 SILLI SACRAMENTO, CA 95814 1001 I STREET

PIERRE H. DUVAIR
CALIFORNIA ENERGY COMMISSION
MS-41 1516 NINTH STREET, MS-41 SACRAMENTO, CA 95814

WADE MCCARTNEY CALIF PUBLIC UTILITIES COMMISSION DIVISION OF STRATEGIC PLANNING 770 L STREET, SUITE 1050 SACRAMENTO, CA 95814